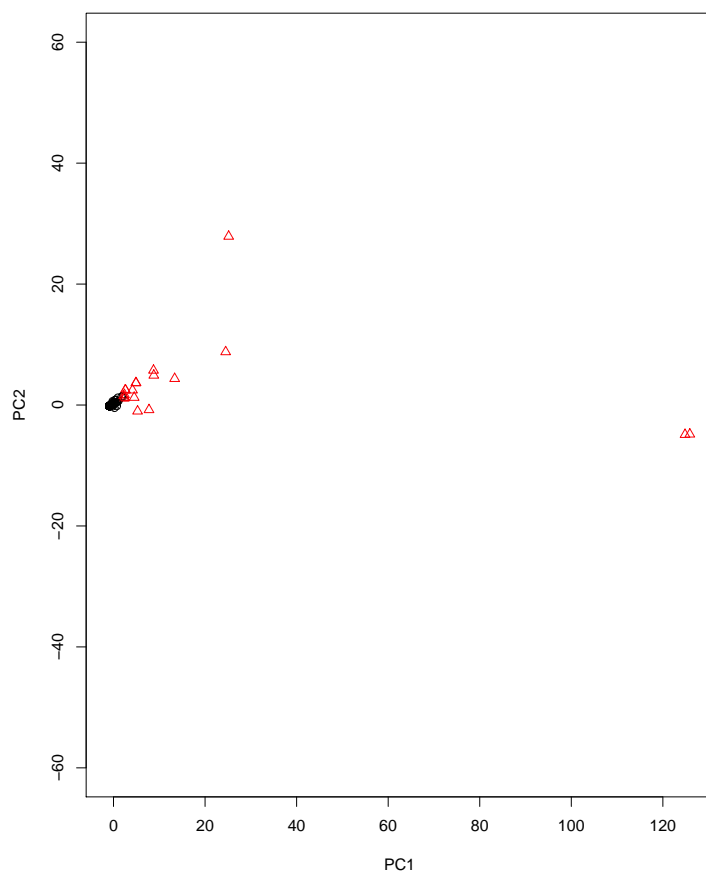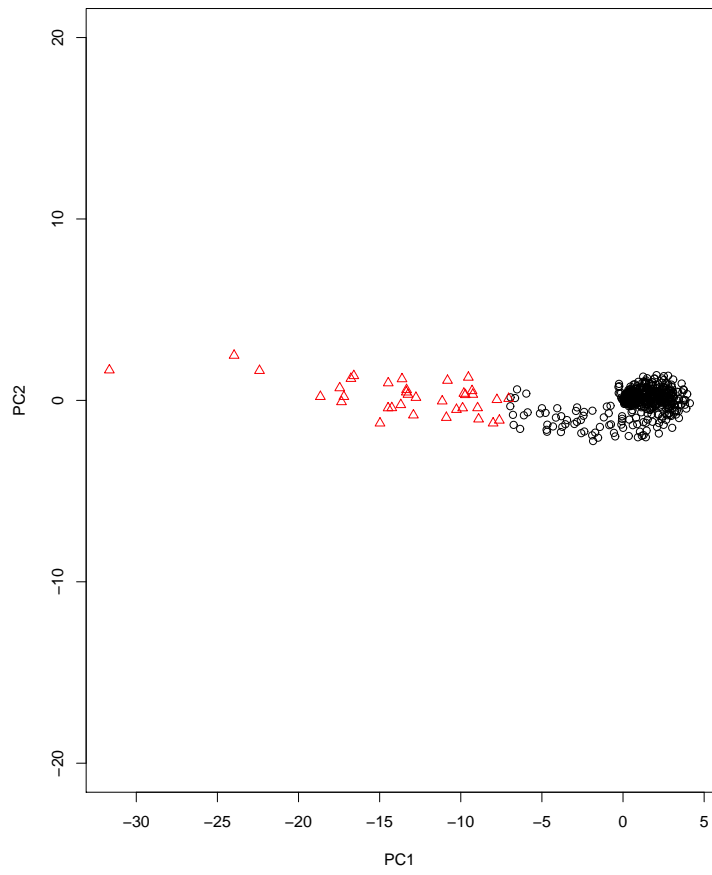Figure S1: Two dimensional embedding of miRNAs used for FE. Red triangles are selected miRNAs.
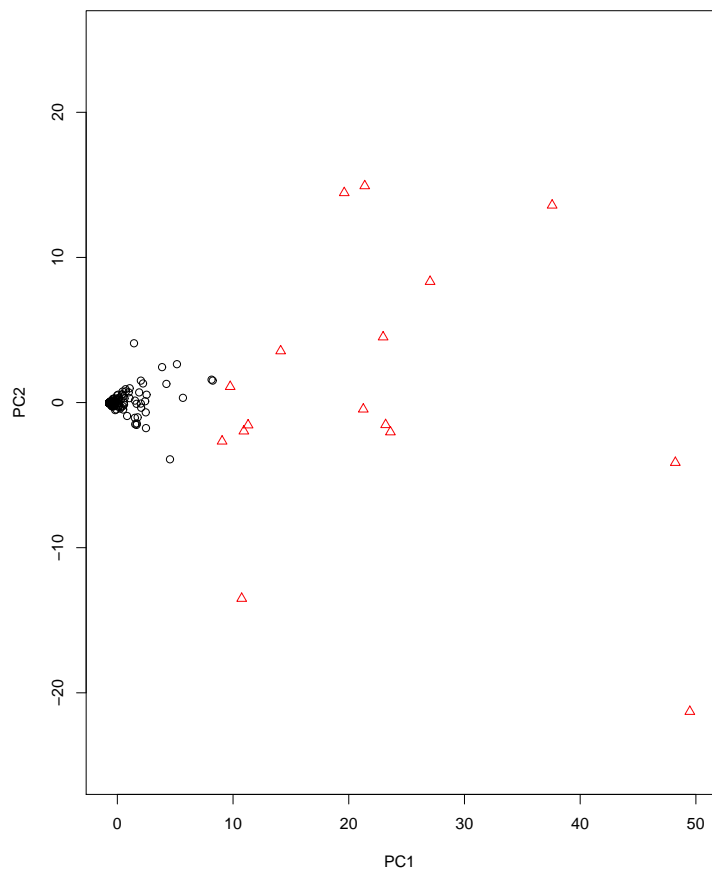
Alzheimer Disease

carcinoma

CAD

NPC

HCC
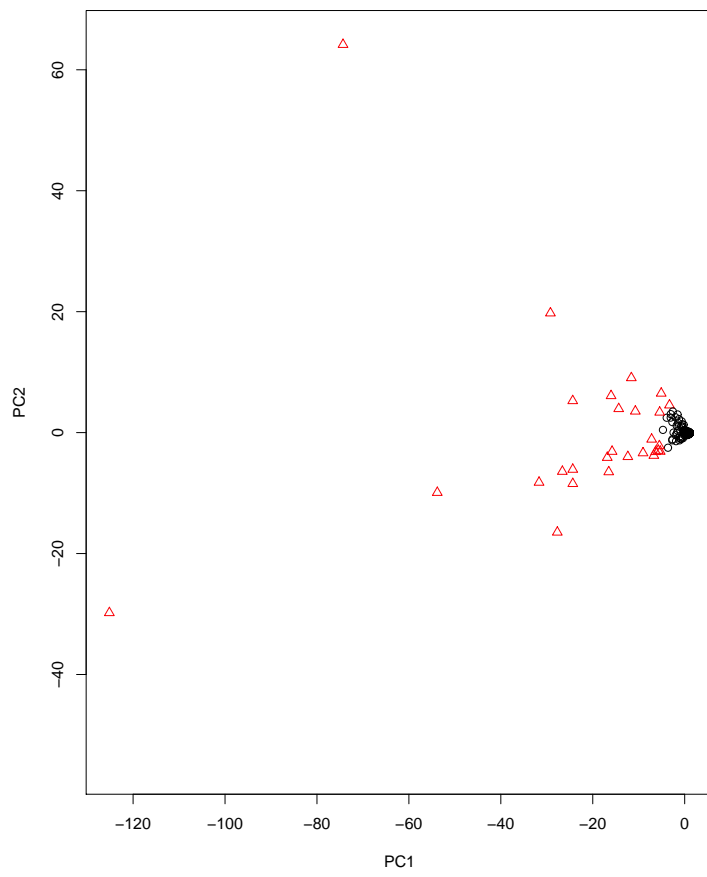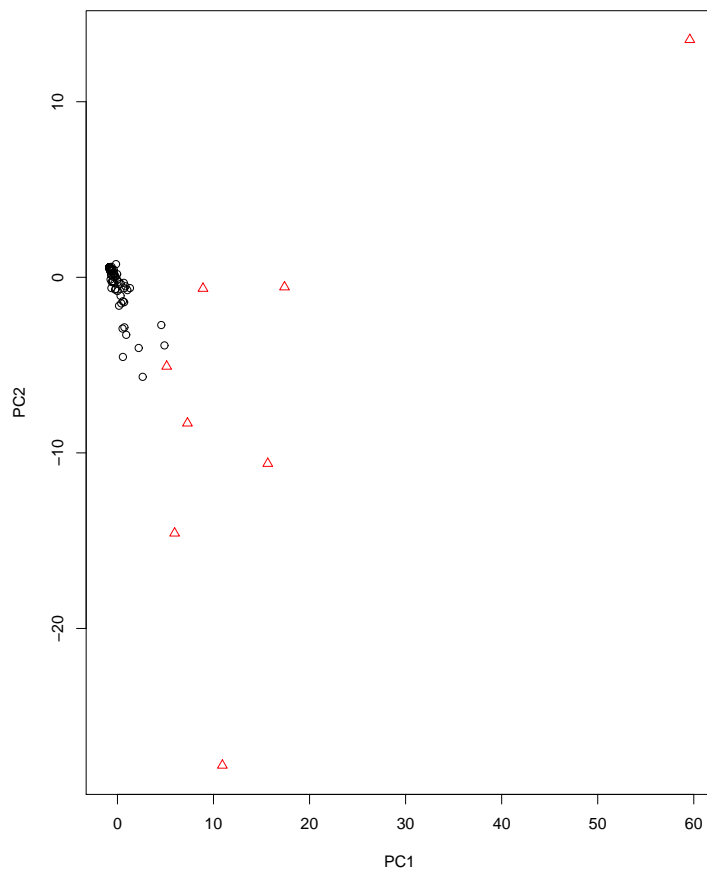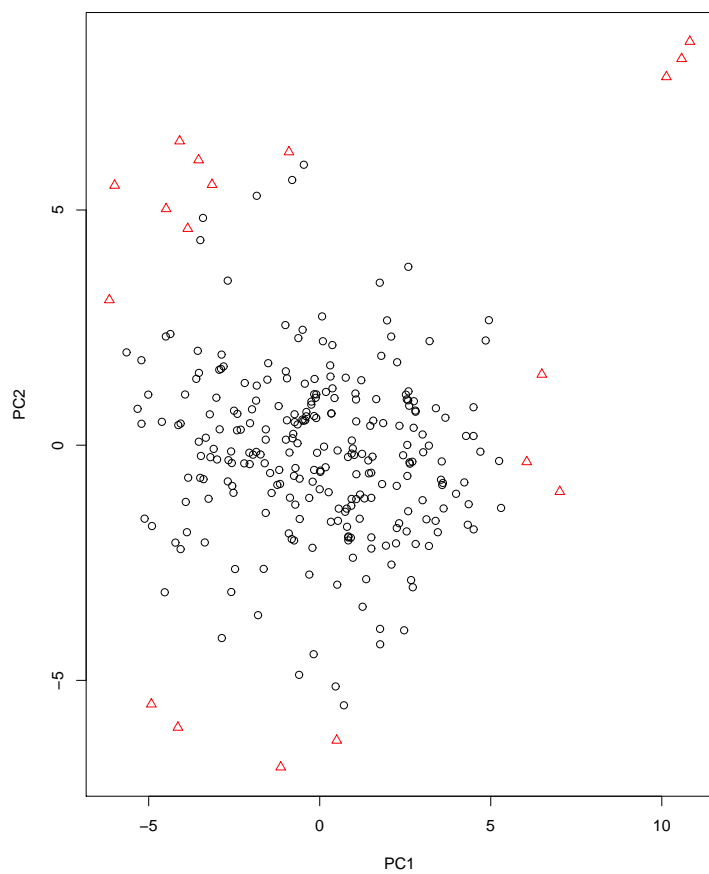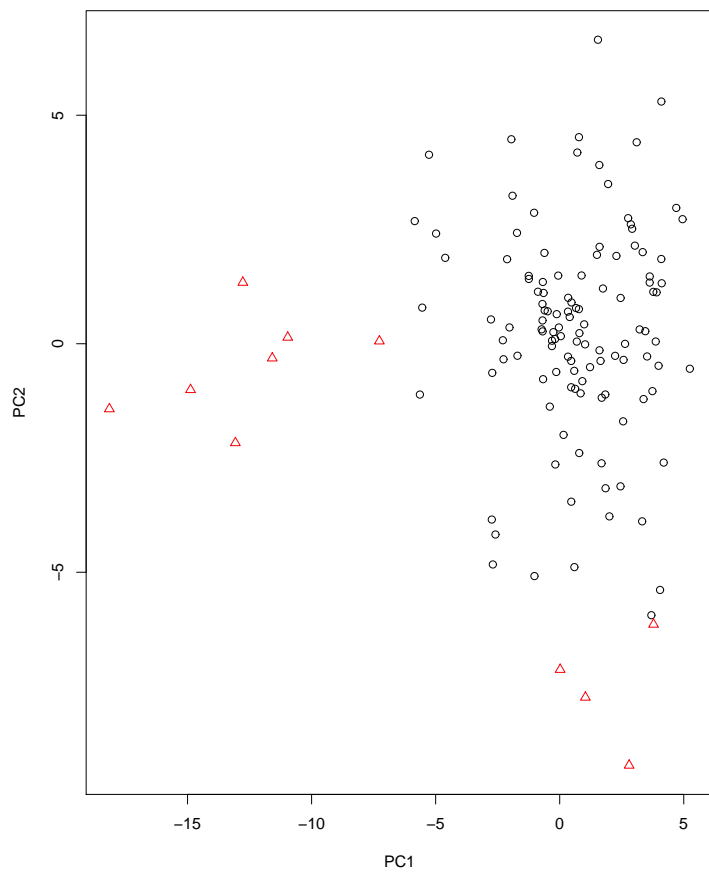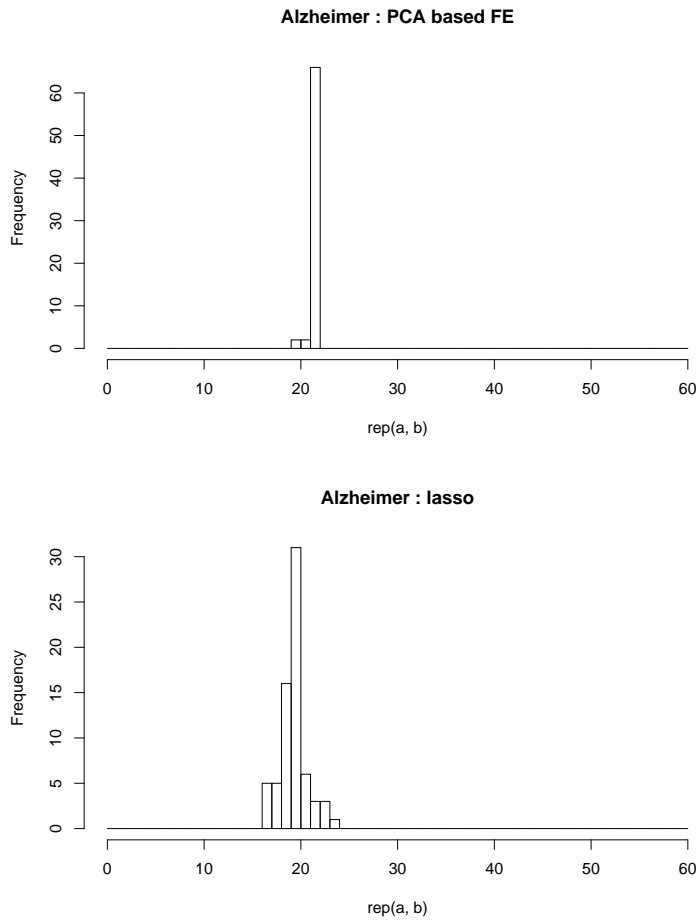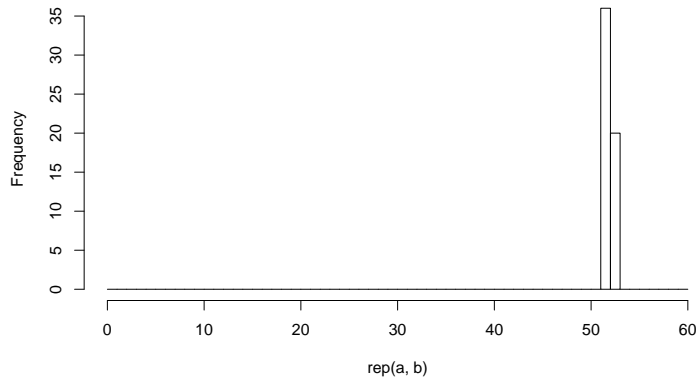

3

BC

AML

Figure S2 : Histogram of the number of selected miRNAs in FE and the scatter plot of the mean number of selected miRNAs between lasso and PCA based FE. The red solid line in the scatter plot indicates linear regression with assuming that intersect is zero (the slope is 1.11 and $P = 0.001$).
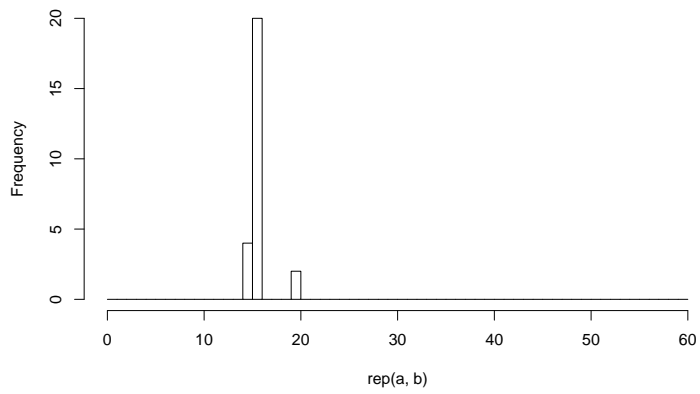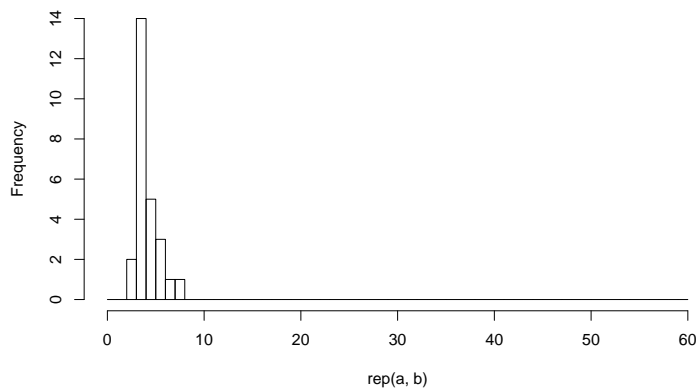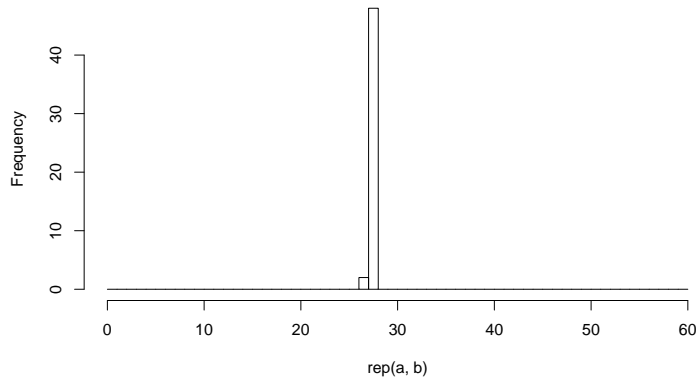
Alzheimer : PCA based FE

Alzheimer : lasso

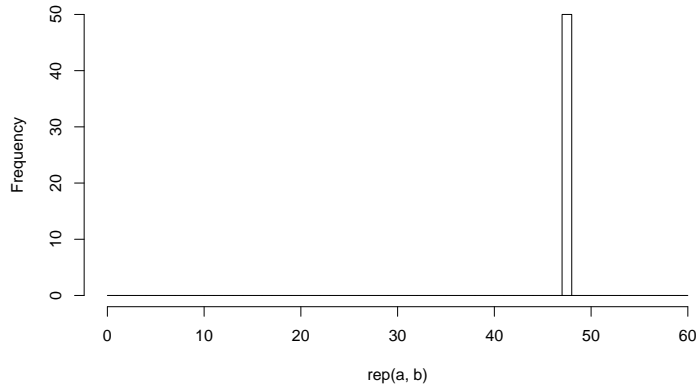**caricinoma : PCA based FE**

caricinoma : lasso
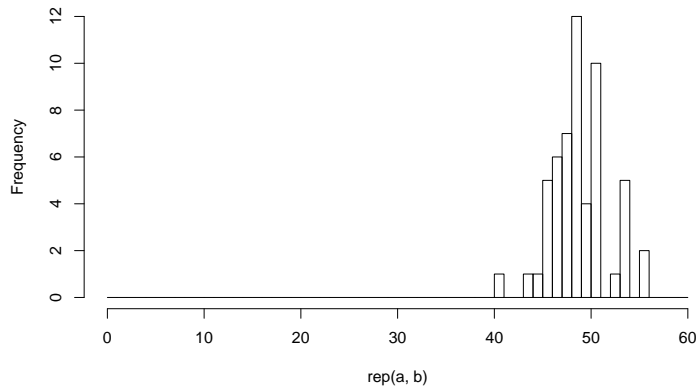
CAD : PCA based FE

CAD : lasso

NPC : PCA based FE

NPC : lasso

HCC : PCA based FE

HCC : lasso

7
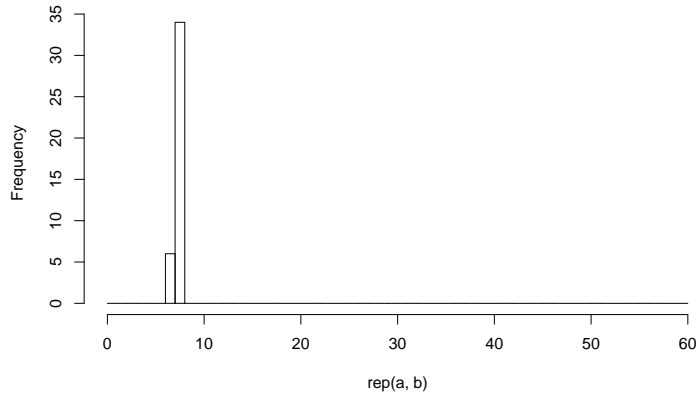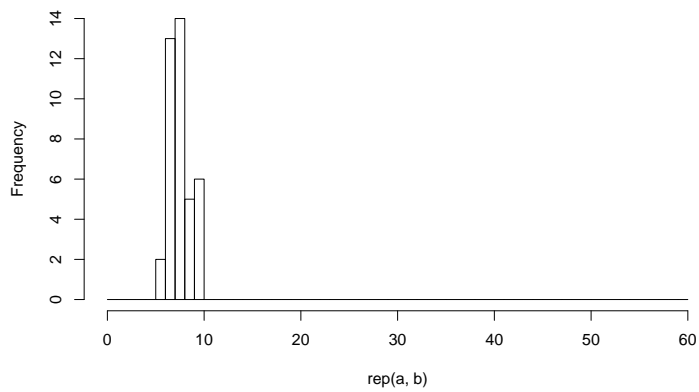
Breast.cancer : PCA based FE

Frequency

12
10
8
6
4
2
0

0   10   20   30   40   50   60

rep(a, b)

Breast.cancer : lasso

Frequency

15

10

5

0

0   10   20   30   40   50   60

rep(a, b)

AML : PCA based FE

Frequency

25
20
15
10
5
0

0   10   20   30   40   50   60

rep(a, b)

AML : lasso

Frequency

25
20
15
10
5
0

0   10   20   30   40   50   60

rep(a, b)

number of selected miRNAs